

GCE

Psychology

Unit H567/01: Research methods

Advanced GCE

Mark Scheme for June 2018

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations

Annotation	Meaning	
?	Unclear	
AE	Attempts evaluation	
BOD	Benefit of doubt	
CONT	Context	
×	Cross	
EVAL	Evaluation	
	Extendable horizontal line	
<u></u>	Extendable horizontal wavy line	
IRRL	Significant amount of material which doesn't answer the question	
NAQ	Not answered question	
RES	Good use of resources	
×	Tick	1
1.	Development of point	
	Omission mark	

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Section A: Multiple choice

Question	Answer
1	В
2	А
3	А
4	А
5	D
6	В
7	А
8	А
9	В
10	А
11	В
12	D
13	D
14	С
15	Α
16	D
17	А
18	В
19	A
20	Α

Section B: Research design and response

Write an appropriate research aim for the study. [2]						
Question	Answer	Marks	Guidance			
21	Something like The aim was to investigate what people do on a long journey Or, to investigate if there are differences in the behaviour of people of different ages whilst on a long journey	Max 2	 -Context = journey (including modes of transport – e.g. car, bus, plane, train etc), and/or any relevant related behaviours from the candidates suggested behavioural categories) -Accept answers relating to an overall aim (e.g. <i>to investigate what people do on a long journey</i>) or ones with a more specific focus 			
	Clearly written aim	2	(e.g. to investigate if there are differences in the behaviour of people			
	Attempt to write aim	1	of different ages whilst on a long journey) etc			
	The candidate has not provided any creditworthy information	0	 -For 2 marks, as a guide look for the 'what' (is being studied) and 'where' (e.g. mode of transport, such as train or car, or, just referring to a 'journey'). Example 2 mark response To investigate if people read or text more whilst on a train, or To see what kind of behaviours people engage in to pass the time whilst on a journey -Some example 1 mark responses To investigate boredom To investigate people on trains -Cap at 1 mark if worded as a question (e.g. will people read more on a train or use at their phones?) 			

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Exp exp	Explain how you would use the naturalistic observation method to conduct this research. Justify your decisions as part of your explanation.						
In y	our answer, the requ	ired features that you must refer to are:					
• pa	articipant or non-part	icipant observation					
• be	ehavioural categories	5 ·					
• tii	me or event sampling						
• he	ow data will be recor	ded during the observation					
You	You should use our own experience of practical activities to inform your response. [15]						
Question	Answer	Marks	Guidance				
22							

Level of response	Details of required features (RFs) included	Justification of decisions made	Reference to own	Additional guidance		
Good 12-15 marks Reasonable 8-11 marks	 -All 4 required features (RFs) addressed -Accurate and detailed knowledge and understanding of <i>each</i> feature in context -Good evidence of application of required features in context -All 4 required features addressed -Reasonably accurate and detailed knowledge and understanding of <i>each</i> feature 	 -Appropriate justification of all decisions and <i>some</i> is contextualized -Well developed line of reasoning that is clear and logically structured -Some appropriate justification of decision related to all four required features (8 marks if only three required features instified) 	practical work-Explicit referenceto own practicalwork and clear linksbetween own workand the plannedrequired feature.f. e.g. specificmention of aim orprocedural features-For top band(good) 12 marks ifjust one RF linked,ti all four arelinked-If there is noexplicit clear linkbetween ownpractical work andany of the 4required featurescaps the mark at 11maximum.	 -Explicit reference to own practical work and clear links between own work and the planned research for each required feature. e.g. specific mention of aim or procedural features -For top band (good) 12 marks if just one RF linked, 13 marks if two, 14 marks if three and 15 if all four are linked -If there is no explicit clear link between own practical work and any of the 4 required features caps the mark at 11 maximum. 	 -Explicit reference to own practical work and clear links between own work and the planned research for each required feature. e.g. specific mention of aim or procedural features -For top band (good) 12 marks if just one RF linked, 13 marks if three and 15 if all four are -Context = journey (including modes e.g. car, bus, plan train etc), and/or related behaviours from the candida behavioural categories) RF1 To be regarded as having been 'add must be some description, and not j 'participant', or 'non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' observation technique incorrectly na as not addressed (e.g. claiming part used but actually describing non-participant obs' out as appling (e.g. for event sa clear that each time every behaviours 	-Context = journey (including modes of transport – e.g. car, bus, plan train etc), and/or any relevant related behaviours from the candidates suggested behavioural categories) RF1 To be regarded as having been 'addressed' there must be some description, and not just naming/stating 'participant', or 'non-participant obs' will be used. If observation technique incorrectly named, then counts as not addressed (e.g. claiming participant obs is used but actually describing non-participant) RF2
	-At least three applications of required features in context If three required features are addressed in deta links made to own practical work award 9 marks	-There was a line of reasoning evident with some structure il and justified in context and explicit				Sufficient here to identify / name the behavioural categories to be used (whether presented as a list or in a table) RF3 To demonstrate understanding must provide a definition, or must be a clear distinction between event and time sampling (e.g. for event sampling making it clear that each the operate behaviour from the
Limited 4-7 marks	 -Two of the required features addressed in context -Limited application of required features OR three or all four required features referred to but in a limited way (in context or not) If one required feature addressed in detail and j 	-Attempt to justify decision(s) but weak -Evidence of some structure, but weak ustified in context and explicit links			behavioural categories occur they are recorded and over what total time period – the entire journey, first half-an-hour etc). For time sampling if just saying for example 'record behaviour every 10 minutes' without explaining for how long (e.g. just at that moment, or for 30 seconds) at that interval = limited response here. If sampling named incorrectly, then counts as not addressed (e.g. claiming event sampling is used but actually describing time sampling)	
Basic 1-3 marks	 made to own practical work award 4 marks -One of the required features addressed -Weak application of required features OR more than one of the required features referred to but in a very brief and/or basic way 	-None, or if present very weak			required features caps the mark at 11 maximum.	required features caps the mark at 11 maximum.

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Describe two	Describe two things that may influence the inter-rater reliability of this study. [6]					
Question	Answer		Marks	Guidance		
23	Possible answers could include: clarity of behavioural categories; whether behavioural categories discussed / agreed beforehand; where observers are positioned; number of observers etc		Max 6	-Context = journey (including modes of transport – e.g. car, bus, plan train etc), and/or any relevant related behaviours from the candidates suggested		
	Clear, detailed response in context		3	behavioural categories)		
	Clear, detailed response but not in context	OR attempt in context	2	-Accept answers that relate to things		
	Brief and/or weak attempt to describe something that may influence inter-rater reliability (whether in context or not)		1	that would make inter-rater reliability low or high (or both)		
	The candidate has not provided any creditworthy information		 Remember, inter-rater reliability the extent to which if the study warepeated the same findings would obtained. It is concerned with the of two or more observers to look and record the same behaviours same way. Nothing creditworthy for ref to the influence of situational variables. 	 -Remember, inter-rater reliability is not the extent to which if the study was repeated the same findings would be obtained. It is concerned with the ability of two or more observers to look out for and record the same behaviours in the same way. -Nothing creditworthy for ref to the influence of situational variables, such 		
				as the time of day, length or journey or the number or types of people on the train in different carriages etc		

Out	Outline one strength and one weakness of using the naturalistic observation method in this study. [6]				
Que	stion	Answer		Marks	Guidance
24		Strengths could include: partici unaware they are being observ participants behaviour; samplin behaviour; increased validity et	pants likely to be ed; no restrictions on g more natural c	Max 6	-Context = journey (including modes of transport – e.g. car, bus, plan train etc), and/or any relevant related behaviours from the candidates suggested behavioural categories)
		Weaknesses could include: rec problematic; demand character desirability IF people realise / b watched: ethical considerations	ording data can be istics / social ecome aware of being s etc		-Lack of control over extraneous variables and the impact these could have on the findings is creditworthy here
		Clear, detailed outline of streng context	th / weakness in	3	Some ethical considerations are creditworthy, but using the issue of lack of 'consent' as a weakness is not really
		Clear, detailed outline of strength / weakness but not in context	OR attempt to outline strength / weakness in context	2	appropriate if the planned research is described as occurring in a public place – e.g. a train. Consent IS creditworthy as a strength in fact, where the point could
		Brief and/or weak attempt to ou weakness (whether in context of	utline strength / or not)	1	be made that as it is a public place direct formal consent is not required.
		The candidate has not provided information	d any creditworthy	0	-Reference to research not being replicable on its own without any elaboration (e.g. influence of an extraneous variable) is not creditworthy
					-Example 1 mark responses could include just saying something like -High in ecological validity as a natural environment (coach journey)
					-strength is more natural behaviour can be observed -participants don't know they're being observed no control over extraneous variables
					2 mark example <i>High in ecological validity as a natural environment</i> (coach journey) so common behaviours will be observed

Dese	escribe two ways you would address the ethical consideration of 'responsibility' in relation to this study. [6]					
Que	stion	Answer	Marks	Guidance		
25		Under the new (2015) BPS (British psychological Society) ethical considerations 'responsibility' in general refers to the general care of participants. More specifically it includes: protection of participants (ensuring participants are not harmed (mentally or physically); and debrief (informing participants about how and why the research was done afterwards (and sharing findings, need for deception if any used etc)	Max 6	 -Context = journey (including modes of transport – e.g. car, bus, plan train etc), and/or any relevant related behaviours from the candidates suggested behavioural categories) -Both points could be about (different) aspects of the same thing – e.g. two 		
		Clear, detailed description in context	3	points about protection for harm in		
		Clear, detailed description but not or	2	some way		
	Brief and/or weak attempt to describe hov consideration of 'responsibility' (whether in The candidate has not provided any credi	Brief and/or weak attempt to describe how to address the ethical consideration of 'responsibility' (whether in context or not)	1	-Responses referring to ethical considerations in general (e.g.		
		The candidate has not provided any creditworthy information	0	deception, or keeping data anonymous etc) without explicit reference to how this could relate to 'responsibility' (e.g. protection of participants in some way) are not creditworthy		
				-Some example 1 mark responses Debrief participants Ask if pps happy for their data to be used		
				-If a candidate just identifies 'protection' and/or and 'debrief' then award 1 mark		

Section C: Data analysis and interpretation

Calo	Calculate the mean rating of the importance of physical appearance for being in love given by males. Write your answer to two						
sigr	nificar	nt figu	res. [3]				
Que	stion		Answer		Marks	Guidance	
26	(a)		157/20 = 7.85		Max 3	-Remember to check table of data	
			The mean is 7.85, so to two significant figures = 7.9			presented in the question as some	
	Mean correctly stated to two significant figures with all workings shown		icant figures with all workings shown	3	candidates may have written their		
			Mean correctly stated to two	OR workings shown but mean not	2	answer here	
			significant figures but with no	written to two significant figures			
			workings shown			2 mark =	
	Mean only stated but not to two significant figures		1	157/20 = 7.85 (as not to two SFs)			
			The candidate has not provided an	ny creditworthy information	0		
				, ,			

Calc	Calculate the median rating of the importance of physical appearance for being in love given by females. [2]							
Que	stion	Answer		Marks	Guidance			
26	(b)) 1,1,2,3,3,3,3,3,3,3, <u>4,5</u> ,5,5,5,6,6,7,7,9 The median is 4.5		Max 2	-Remember to check table of data presented in the question as some			
		Median correctly stated with workings shown		2	candidates may have written their			
		Median correctly stated but with no workings shown answer	workings shown without swer being stated	1	answer nere			
		The candidate has not provided any credi	litworthy information	0				

Wha	What is the mode for the importance of physical appearance for being in love given by females? [1]							
Question			Answer		Guidance			
26	(C)		1,1,2 ,3,3,3,3,3,3,3 ,4,5,5,5,5,5,6,6,7,7,9	Max 1	-Remember to check table of data			
			The mode is 3		presented in the question as some			
Mode correctly stated		Mode correctly stated	1	candidates may have written their				
			The candidate has not provided any creditworthy information	0	answer here			

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Wha	at is the ra	nge for the rating of the importance	of physical appearance for being in	love given	by males and females. Show your
wor	kings. [4]				
Question A		Answer		Marks	Guidance
27	(a)	Males range = 5 (10-5)		Max 4	If not clear what refers to male and
		Females range = 8 (9-1)			female (i.e. if just figures presented) cap
					2
*Also accept answers from the alternative calculation for the range th			native calculation for the range that		-*If a candidate has calculated the range
		Males range = 6 (10-5(+1))			overall (across males and females
		Females range = $9(9-1(+1))$			combined) correctly, and shown
					workings can be awarded 4 marks. For
		*Combined males & females (10-1) = 9 (or +1 = 10)			example, If some lack of clarity in either the labelling of what the figure presented
		For each calculation of the range (i.e	e. for males and females)		refers to and/or the calculations cap at 2
		Range correctly stated with correct workings shown			
		Range correctly stated but with no	OR correct workings shown	1	
		workings shown	without answer being stated or		
			answer wrongly stated		
		The candidate has not provided any	creditworthy information	0	

Out	Outline one conclusion from the calculation of the range for the rating of the importance of physical appearance for being in love given							
by r	nales	and females. [3]						
Question		Answer	Marks	Guidance				
27	(b)	For example Females (range = 9) vary more than males (range = 6) in how much they think the importance of physical appearance is for being in a relationship. Males are more consistent, suggesting men are of the same or similar opinion that appearance does matter in terms of forming relationships than females.	Max 3	-Context = love (and things 'love related') -Note: a conclusion is an interpretation of a finding (here the interpretation of the range). It is not creditworthy just to state findings again on their own				
		Clear outline of conclusion in context	3	-Nothing creditworthy for conclusions				
		Attempt in context	2	based on other descriptive statistics (e.g.				
		Attempt but not in context	1	the mean), or incorrectly interpreting the				
		The candidate has not provided any creditworthy information	0	range as an indicator average rating (e.g. claiming that females regard appearance as more important than males) 1 mark example There is more variation in females than males scores 2 mark example There is more variation in females than males scores about physical appearance Example 3 marks Males are more consistent, suggesting men are of the same or similar opinion that appearance does matter in terms of forming relationships than females.				

Usir	Using the formula provided calculate the value of chi square for the data in the table below. The E values (expected frequencies) have									
already been provided (in the table in italics). Show your workings. [5]							Maulta	Quidence		
Que	stion	1			$\frac{1}{1}$, alightly dag	anding on how mony	Marks	Guidance
20	(a)		decim	iswer presen	used at differ	value will var	y siignuy dep	ending on now many	wax 5	As the expected frequencies are
			accept	t the overall >	⁽² answer as	anything betw	veen 5 0 and	5 02 (e g 5 0		already provided there are
			5.0127	78772, 5.012,	5.02) and to	any number	of decimal pla	aces		essentially four steps left to
					, , 			1		perform to reach the correct
				Step-by-ste	p calculations	s for Chi squa	re test	-		calculation. As there are 5 marks
			Cell	O-E	(O-E) ²	(O-E) ² \ E	$\Sigma (O-E)^2 \setminus E$			in total to be awarded, the
			а	5 - 8.5	$(-3.5)^2$	12.25 / 8.5				breakdown is one mark for each
		= -3.5 = 12.25 = 1.441 15 - 11 5 (3 5) ² 12 25 / 11 5 1.441			step correctly performed, with the					
			b	= 3.5	= 12.25	1.065	1.065			workings
			с	12 – 8.5	$(3.5)^2$	12.25 / 8.5	1.065			workings.
				= <u>3.5</u> 8 – 11 5	$(-3.5)^2$	1.441	5.012			*Please note where candidates
			d	= -3.5	= 12.25	1.065				have calculated X ² cell-by-cell this
									is also creditworthy	
			Correct calculation with all workings shown					5		
			Correc	ct calculation	of the sum of	(O-E) ² /E but	with some or	all workings missing	4	-Alternative ways of using the
			Correc	t calculation	of each indiv	idual (O-E) ² /E	value		3	formula, providing it arrives at the
			Correc	t calculation	of each indiv	idual (O-E) ² v	alue		2	correct cell value (expressed as a
			Correc	ct calculation	of each indiv	Idual (O-E) va			1	overall answer is creditworthy (e.g.
			I ne ca	andidate has	not provided	any creditwor	thy informatio	n	U	some students who learn about X^2
										in different subjects may do this)
		•	* OR 1	mark for eac	h set of calcu	lations done	correctly for e	each cell ((O-E) ² /E) Plus	1 mark	
			for ove	erall correct a	nswer (X² va	lue)		· · · · · · · · · · · · · · · · · · ·		

Using the extract of the tables of critical values for the chi square test presented below, what is the critical value at the								
5% j	probal	bility l	evel for data collected in this study? [2]					
Question Answer			Answer	Marks	Guidance			
28	(b)		The critical value is 3.841	Max 2	-If a candidate just circles the correct critical value in the table award 2 marks (as to be able to do this requires			
			Critical value correctly stated	2	knowledge of what df to use)			
			Degrees of freedom correctly identified as 1 but without stating the critical value from the table (or incorrectly stating the critical value)	1	-Award 1 mark if df = 1 is just circled on			
			The candidate has not provided any creditworthy information	0	the table (so remember to check table)			

Writ	e the sign	ificance statement for the analysis p	erformed on this data using the Ch	i square tes	t. [2]
Question		Answer		Marks	Guidance
28	(C)	$X^2 = 5.01$, df=1, p<0.05			Example 2 marks (written version) As the calculated value is higher than the critical it is significant -Example 1 mark response The null is rejected, and/or the alternative hypothesis is accepted
		statement (calculated value, degrees of freedom and probability level)	formal statement		_
		Just stating p<0.05	response		
		The candidate has not provided any	creditworthy information	0	

Using the data	presented in the pie chart in Figur	e 1, calculate the ratio of how many p	people said	that personality was the most important
Question	Answer	was. Snow your workings. [4]	Marks	Guidance
29	Answer = 3:1		Max 4	-Zero if ratio presented the wrong way round (1:3)
	First, the number of people represented by 37.5% (who regarded 'personality' as most important for love) and 12.5% (who regarded 'wealth' as most important for love) needs to be calculated. This requires a knowledge of percentages. 37.5% of $40 = 37.5/100 \times 40 = 15$ 12.5% of $40 = 12.5/100 \times 40 = 5$			
	Correctly stated ratio with all workings shown clearly			
Correctly stated ratio but with some or all workings missingOR correctly stated ratio, but not simplified (i.e. left at 15:5)Some correct workings shownSome correct workings shown but also with some that are incorrect			3	
			2	
			1	
	The candidate has not provided an	y creditworthy information	0	

Evaluate the p	Evaluate the population validity of the data collected in this study. [6]						
Question	Answer			Marks	Guidance		
30 In general, population validity is a form of external validity that refers to the extent to which the findings from research can be applied to other people who did not take part directly in the research.			Max 6	-Context = love (and things 'love related') -Accept positive and/or negative evaluation points as creditworthy			
	Examples of points that could be made here include: size of the sample (40) and how this affects generalising the findings to others; balance of males and females (20 males, 20 females in the sample); potential bias in the sample due to the use of the self-selected sampling method used (so only those interested in, or currently in, or out of love may have volunteered to take part etc).				-Do not accept as creditworthy any general evaluation points related to the methodology used in general (e.g. use of the self-report method etc)		
	Clear evaluation with two or more points with some context (for 6 marks two of the points must be in context)Clear evaluation with OR one clear OR two points, one in			5-6			
				3-4			
	two or more points	evaluation point in	context one not				
	made but not in context	context					
	Attempt to evaluate popul	ation validity (whether ir	n context or not)	1-2			
	The candidate has not pro	wided any creditworthy	information	0			

The Outl	discus ne on	ssion section of the write-up of a prac e conclusion from the discussion sec	tical report includes a conclusion n tion of any of your own practical ac	nade from t tivities. [3]	he analysis of the data collected.
Que	stion	Answer		Marks	Guidance
31		Responses here will vary dependin candidate investigated in their cho	ng on the nature of what the sen practical activity.	Max 3	-Note: it is not necessary to know the full aim or hypothesis of the candidates chosen practical activity in order to be
		Conclusion clearly outlined in cont	ext	3	able to gain full marks here.
		Conclusion clearly outlined but not in context	OR attempt to outline conclusion in context	2	-Must be a conclusion (interpretation of
		Brief and/or weak attempt to outlin not)	e conclusion (whether in context or	1	a finding) and not simply the presentation of results / findings. Cap at 1 mark max if just a finding(s) / result(s) presented
		The candidate has not provided ar	ny creditworthy information	0	
					For 3 marks there must be sufficient detail / elaboration. For example -The conclusion could be elaborated by suggestion of an application of the outcome of their study
					-An explanation of why the findings occurred as they did is another way of elaborating on their response

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